

What is claimed is:

1. An ATM cell transmitting device of an ATM switching system comprising:

5 a time slot input unit for switching a plurality of time slots;  
a packet processing unit for forming a CPS packet by using the switched time slot data and;

a CAM for receiving header information of the CPS packet and outputting an ATM buffer number;

10 an ATM cell transmitting unit for storing the CPS packet data outputted from the packet processing unit according to the ATM buffer number outputted from the CAM, to form an ATM cell; and

a controlling unit for performing a general controlling operation.

15 2. The device according to claim 1, further comprising a timer for setting an ATM cell transmitting time of the ATM cell transmitting unit.

3. The device according to claim 2, wherein the ATM cell transmitting unit receives a CPS packet data and an ATM header for a predetermined time as  
20 set in the timer and outputs an ATM cell.

4. The device according to claim 3, wherein the ATM cell transmitting unit sets CPS packet data which is not received yet as '0' and completes an ATM cell, in case that CPS packet data is not wholly received for a predetermined time  
25 as set in the timer.

5. The device according to claim 1, wherein the header information of the CPS packet refers to a time slot number and a channel identifier (CID).

6. The device according to claim 1, wherein the time slot input unit  
5 comprising:

a time switch for switching a plurality of time slots;

an input buffer unit for storing the plurality of time slot data outputted from the time switch; and

a multiplexer for selectively outputting the time slot data stored in the input  
10 buffer unit.

7. The device according to claim 1, wherein the packet processing unit comprising:

a packet header storing unit for receiving a CPS packet header by time  
15 slot from the controlling unit and storing the same; and

a CPS packet buffer for storing the CPS packet header outputted from the packet header storing unit and the time slot data outputted from the multiplexer, to form a CPS packet.

8. The device according to claim 1, wherein the CAM allocates the  
20 same ATM buffer numbers for the different time slots and CIDs.

9. The device according to claim 1, wherein the ATM cell transmitting unit comprising:

25 an ATM buffer unit for storing the CPS packet data outputted from the

packet processing unit in a plurality of ATM buffers according to the ATM buffer number of the CAM;

an ATM header generating unit for storing an ATM header; and

5 a transmitting buffer for combining the outputs of the ATM buffer unit and of the ATM header generating unit, to form an ATM cell.

10. An ATM cell transmitting device comprising:

a time slot input unit for switching a plurality of time slots;

10 a packet processing unit for receiving the switched time slot data and forming a CPS packet;

a CAM for outputting ATM buffer numbers for the time slot and the CID inputted from the packet processing unit;

15 an ATM transmitting unit for storing the data of the CPS packet outputted from the packet processing unit according to the ATM buffer number outputted from the CAM, to form an ATM cell;

a timer for setting an ATM cell transmitting time of the ATM cell transmitting unit; and

a controlling unit for performing a general controlling operation.

20 11. The device according to claim 10, wherein the time slot input unit comprising:

a time switch for switching a plurality of time slots;

an input buffer unit having a plurality of small capacity of buffers, for storing a plurality of time slot data outputted from the time switch; and

25 a multiplexer for selectively outputting a time slot data stored in the input

buffer unit.

12. The device according to claim 1, wherein the packet processing unit comprising:

5 a packet header storing unit for storing a CPS packet header provided from the controlling unit; and

a CPS packet buffer for storing the CPS packet header outputted from the packet header storing unit and the time slot data outputted from the multiplexer, to form a CPS packet.

10 13. The device according to claim 10, wherein the CAM stores ATM buffer numbers corresponding to the time slots and the CIDs.

14. The device according to claim 10, wherein the ATM cell  
15 transmitting unit sets CPS packet data which is not received yet as '0' and completes an ATM cell, in case that CPS packet data is not wholly received for a predetermined time as set in the timer.

15 15. The device according to claim 10, wherein the ATM cell transmitting unit comprising:

an ATM buffer unit for storing the CPS packet data outputted from the packet processing unit in a plurality of ATM buffers indicated by the ATN buffer number of the CAM;

an ATM header generating unit for storing the ATM header provided from  
25 the controlling unit; and

a transmitting buffer for combining the outputs of the ATM buffer unit and of the ATM header generating unit, to form an ATM cell.

16. An ATM cell transmitting device of a switching system comprising:  
5 an ATM cell receiving unit for extracting a CPS packet from a received ATM cell and storing it according to an ATM buffer number;

a packet processing unit for converting header information of the extracted CPS packet and the ATM buffer number outputted from the ATM cell receiving unit into a time slot number and storing a payload of the CPS packet according to the  
10 converted time slot number; and

a time slot output unit for demultiplexing the payload of the CPS packet outputted from the packet processing unit to a plurality of time slots and outputting the same.

15 17. The device according to claim 16, wherein the header information of the CPS packet is a channel identifier (CID).

18. The device according to claim 16, wherein the ATM buffer number is determined by the VPI/VCI included in the header of the ATM cell.

20 19. The device according to claim 16, wherein the ATM cell receiving unit comprising:

a receiving buffer for storing the ATM cell received through the ATM network;

25 a cell segmenting unit for reading the ATM cell from the receiving buffer,

extracting a CPS packet and outputting VPI/VCI information of the ATM cell header;

a first CAM for outputting an ATM buffer number corresponding to the output VPI/VCI of the cell segmenting unit; and

5 an ATM buffer unit for storing the CPS packet outputted from the cell segmenting unit according to the ATM buffer number outputted from the first CAM.

20. The device according to claim 19, wherein the ATM buffer unit having a small capacity of N number of ATM buffers, for outputting an ATM buffer  
10 number and the channel identifier of the CPS packet header to the packet processing unit as the CPS packet is wholly completed.

21. The device according to claim 16, wherein the packet processing unit comprising:

15 a second CAM for outputting a time slot number corresponding to the ATM buffer number inputted from the ATM receiving unit; and

a CPS packet buffer unit for storing the CPS packet payload outputted from the ATM receiving unit according to the time slot number outputted from the second CAM.

20 22. The device according to claim 16, wherein the time slot output unit comprising:

a demultiplexer for receiving the CPS packet payload from the CPS packet buffer unit and demultiplexing it to a plurality of time slots;

25 an output buffer unit having N number of small capacity of buffers, for

